

[4910-13-U]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39 [66 FR 19383 4/16/2001]**

**[Docket No. 2000-SW-15-AD; Amendment 39-12175; AD 2001-07-09]**

**RIN 2120-AA64**

**Airworthiness Directives; MD Helicopters Inc. Model MD-900 Helicopters**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** This amendment supersedes an existing emergency airworthiness directive (AD) that applies to MD Helicopters Inc. (MDHI) Model MD-900 helicopters. That emergency AD requires, within 6 hours time-in-service (TIS), or before further flight after January 31, 2000, whichever occurs first, inspecting the main rotor upper hub assembly drive plate attachment flange (flange) and determining the torque of each flange nut (nut). If a crack is found, the hub assembly must be replaced before further flight. The emergency AD also requires, within 25 hours TIS or before further flight after January 31, 2000, whichever occurs first, inspecting the hub assembly and verifying that the torque on the nuts is correct. Replacing a cracked hub assembly with an airworthy hub assembly is required before further flight. This amendment requires the same actions as the existing emergency AD but removes the January compliance dates and corrects errors in the existing emergency AD. This amendment is prompted by the discovery that there are several errors in the emergency AD. The actions specified by this AD are intended to prevent failure of the hub assembly, loss of drive to the main rotor, and subsequent loss of control of the helicopter.

**DATES:** Effective May 1, 2001. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 1, 2001.

Comments for inclusion in the Rules Docket must be received on or before June 15, 2001.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Office of the Regional Counsel, Southwest Region, Attention: Rules Docket No. 2000-SW-15-AD, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137. You may also send comments electronically to the Rules Docket at the following address: 9-asw-adcomments@faa.gov.

The service information referenced in this AD may be obtained from MD Helicopters Inc., Attn: Customer Support Division, 5000 E. McDowell Rd., Mail Stop M615-GO48, Mesa, Arizona 85215-9797, telephone 1-800-388-3378 or 480-891-6342, fax 480-891-6782. This information may be examined at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Greg DiLibero, Aviation Safety Engineer, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Blvd., Lakewood, California 90712, telephone (562) 627-5231, fax (562) 627-5210.

**SUPPLEMENTARY INFORMATION:** On December 17, 1999, the FAA issued Emergency AD 99-26-20 that applies to MDHI Model MD-900 helicopters and requires, within 6 hours TIS or before further flight after January 31, 2000, whichever occurs first, inspecting the hub assembly for a crack and verifying the nut torque. If a crack is found, replacing the hub assembly with an airworthy hub assembly is required before further flight. That action was prompted by the discovery of three cracked hub assemblies. Inspections of one hub assembly revealed cracks from all 10 holes in the flange and, in another hub assembly, from one of the 10 holes. That condition, if not corrected, could result in failure of the hub assembly, loss of drive to the main rotor, and subsequent loss of control of the helicopter.

Since the issuance of that emergency AD, the FAA has discovered several errors. Paragraph (b)(2) of the emergency AD incorrectly refers to paragraph (b)(4) rather than (b)(3). There is no paragraph (b)(4) in the emergency AD. That error is corrected in this superseding AD. Paragraphs (b)(2), (b)(3), (b)(3)(vii) and (b)(3)(x) are revised to more clearly state the compliance procedures and the torque stability requirements necessary for accomplishing the AD actions. We have also removed the January compliance dates from this superseding AD as those dates have already passed.

Since an unsafe condition has been identified that is likely to exist or develop on other MDHI Model MD-900 helicopters of the same type design, this AD supersedes emergency AD 99-26-20 to require, within 6 hours TIS, inspecting the hub assembly, part number 900R2101006-105 or 900R2101006-107, for a cracked flange and determining the torque of each nut. If a crack is found, the hub assembly must be replaced before further flight. This AD also requires, within 25 hours TIS, inspecting the hub assembly and verifying the nut torque. Replacing a cracked hub assembly with an airworthy hub assembly is required before further flight. The actions must be accomplished in accordance with the service bulletin described previously. The short compliance time involved is required because the previously described critical unsafe condition can adversely affect the structural integrity and controllability of the helicopter. Therefore, since the initial actions are required within 6 hours TIS, this AD must be issued immediately.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

The FAA estimates that 28 helicopters of U.S. registry will be affected by this AD, that it will take approximately 1 work hour per helicopter to verify the torque, 3 work hours per helicopter to perform the inspection, and 10 work hours per helicopter to replace the hub assembly, if necessary. The average labor rate is \$60 per work hour. Required parts to replace the hub assembly, if necessary, will cost approximately \$21,610 per helicopter. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be \$151,370, assuming 6 torque verifications per helicopter, per year; 6 inspections per helicopter, per year; and 5 hub assembly replacements.

### **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption "ADDRESSES." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their mailed comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 2000-SW-15-AD." The postcard will be date stamped and returned to the commenter.

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. Section 39.13 is amended by adding a new airworthiness directive to read as follows:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "av-info.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2001-07-09 MD HELICOPTERS INC:** Amendment 39-12175. Docket No. 2000-SW-15-AD.  
Supersedes Emergency AD 99-26-20, Docket No. 99-SW-89-AD.

**Applicability:** Model MD-900 helicopters, with main rotor upper hub (hub) assembly, part number (P/N) 900R2101006-105 or 900R2101006-107, installed, certificated in any category.

**NOTE 1:** This AD applies to each helicopter identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For helicopters that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated, unless accomplished previously.

To prevent failure of the hub assembly, loss of drive to the main rotor, and subsequent loss of control of the helicopter, accomplish the following:

(a) For the hub assembly, P/N 900R2101006-107,

(1) Within 6 hours time-in-service (TIS), visually inspect the main rotor upper hub assembly drive plate attach flange (flange) for a crack and determine the torque of each flange attach nut (nut) in accordance with the Accomplishment Instructions, Part I, paragraph 2.A., steps (1) through (7) of MD Helicopter Inc. Service Bulletin SB900-072, dated December 10, 1999 (SB). If a crack is found, before further flight, remove and replace the hub assembly with an airworthy hub assembly.

(2) Within 25 hours TIS, conduct the Accomplishment Instructions, Part II, paragraph 2.B., steps (1) through (6), (8), and (9) of the SB. If a crack is found, before further flight, remove and replace the hub assembly with an airworthy hub assembly.

(b) For the hub assembly, P/N 900R2101006-105,

(1) Within 6 hours TIS, visually inspect the flange for a crack and determine the torque of each nut in accordance with the Accomplishment Instructions, Part I, paragraph 2.A., steps (1) through (7) of the SB.

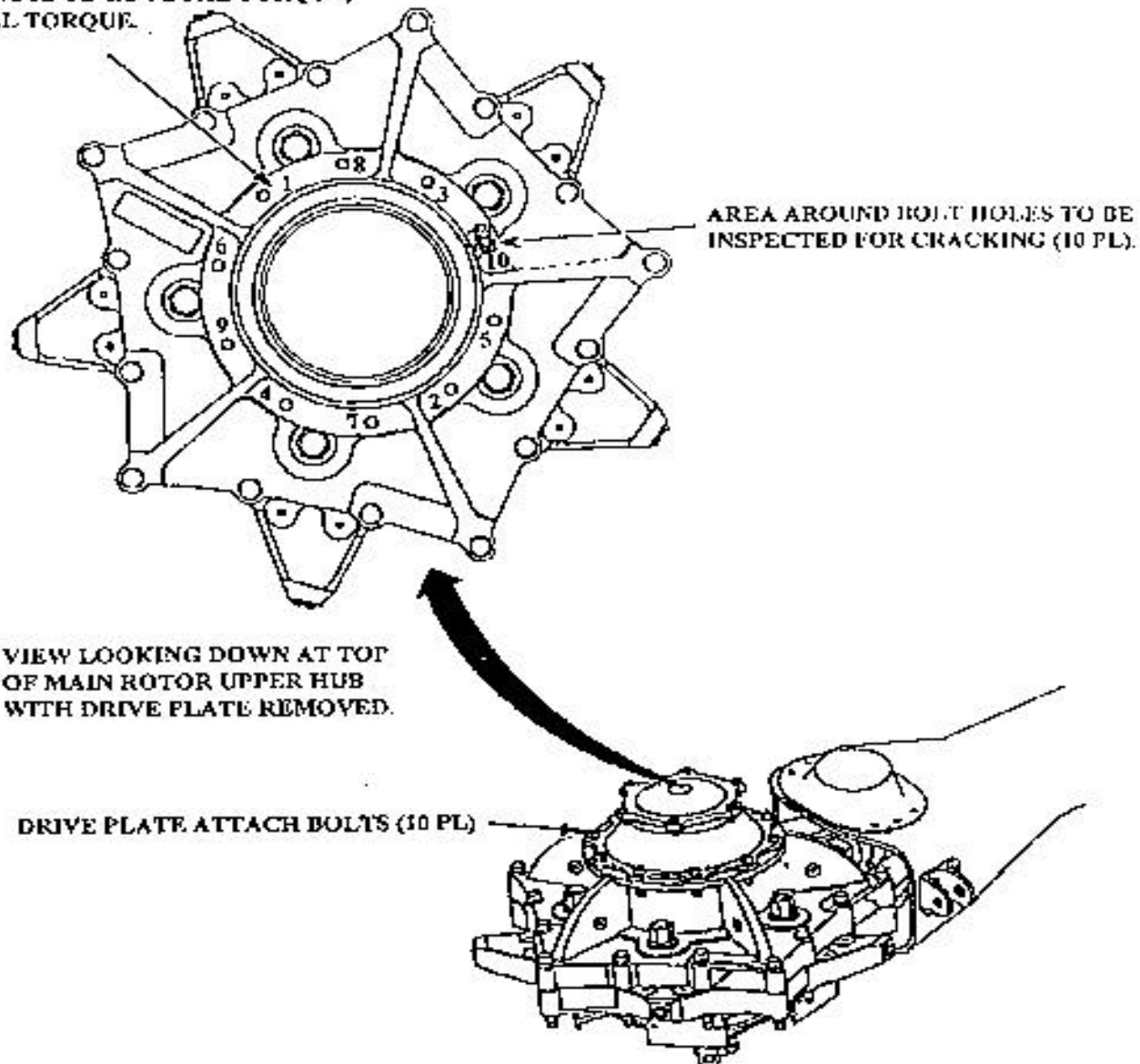
**NOTE 2:** The SB effectivity does not include hub assembly, P/N 900R2101006-105; however, for the requirements of this AD, certain provisions of the SB do apply to this P/N.

(2) If any nut has less than 180 inch pounds (20.34 Nm) of torque, before further flight, remove the drive plate and fretting buffer and inspect the flange in accordance with the procedures in paragraph (b)(3) of this AD. If a crack is detected, before further flight, remove and replace the hub assembly with an airworthy hub assembly. Reassemble in accordance with the procedures in paragraph (b)(3) of this AD.

(3) Within 25 hours TIS, remove the main rotor drive plate assembly and anti-fretting ring and visually inspect the main rotor hub assembly as follows:

- (i) If present, remove sealant from the drive plate attachment to the hub assembly.
- (ii) Mark the main rotor hub holes, bolts, and nuts to correspond with the drive plate hole numbers (see Figure 1).
- (iii) Remove the main rotor drive plate (drive plate) assembly and anti-fretting ring (fretting buffer).
- (iv) Inspect drive plate to rotor hub assembly mating surfaces and the fretting buffer for fretting.
- (v) Using paint stripper (Consumable Item List C313 or equivalent) and cleaning solvent (C420 or equivalent), remove the paint from the upper mating surface of the hub assembly to enable an accurate visual inspection of the drive plate attachment bolt hole (bolt hole) area for cracking (Figure 1). Ensure the paint stripper and solvent DO NOT contaminate the upper bearing and upper grease seal areas.
- (vi) Using a 10-power or higher magnifying glass and bright light, inspect the mating surface area and the area around and inside the 10 bolt holes of the hub assembly for a crack. If a crack is found, prior to further flight, replace the hub assembly with an airworthy hub assembly.
- (vii) If no crack is found, remove fretting debris from the mating surfaces of the hub assembly and the drive plate assembly, reassemble, fillet seal (C211 or equivalent) the surface of the drive plate to fretting buffer to hub assembly mating lines, and seal all exposed unpainted upper surfaces of the hub assembly.
- (viii) Reinstall the main rotor drive plate using 10 new sets of replacement attachment hardware. Torque the nuts to 160 inch pounds above locknut locking/run-on torque in the sequence shown (Figure 1). Record in the rotorcraft logbook, or equivalent record, the locknut locking/run-on torque for each nut.
- (ix) After the next flight, verify that the torque on each of the 10 nuts is at least 160 inch pounds above the locknut locking/run-on torque (minimum torque). Retorque as required without loosening nuts.
- (x) Thereafter, at intervals of at least 4 hours TIS, not to exceed 6 hours TIS, verify that the torque of each of the 10 nuts is at least the minimum torque. Retorque as required without loosening nuts. This torque verification is no longer required after the torque on each of the 10 nuts has stabilized at a torque value of 160 or more inch pounds for each nut during two successive torque verifications.

1. MAIN ROTOR DRIVE PLATE ATTACHMENT  
HARDWARE TORQUE SEQUENCE.
2. NUMBERING MAY START AT ANY HOLE.
3. TORQUE NUTS TO 1/2 TOTAL TORQUE,  
THEN FULL TORQUE.



**Figure 1. Main Rotor Upper Hub Assembly Inspection.**

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Los Angeles Aircraft Certification Office (LA ACO), FAA. Operators shall submit their requests through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, LA ACO.

**NOTE 3:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the LA ACO.

(d) If any nut torque is below minimum torque and no hub assembly crack is found before disassembly inspection, after retorquing in accordance with the applicable Maintenance Manual, a special flight permit for one flight below 100 knots indicated airspeed may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the helicopter to a location where the requirements of this AD can be accomplished.

(e) The flange and torque inspections shall be done in accordance with the Accomplishment Instructions, Part I, paragraph 2.A., steps (1) through (7) and Part II, paragraph 2.B., steps (1) through (6), (8), and (9) of MD Helicopters Inc. Service Bulletin SB900-072, dated December 10, 1999. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from MD Helicopters Inc., Attn: Customer Support Division, 5000 E. McDowell Rd., Mail Stop M615-GO48, Mesa, Arizona 85215-9797, telephone 1-800-388-3378 or 480-891-6342, fax 480-891-6782. Copies may be inspected at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(f) This amendment becomes effective on May 1, 2001.

**FOR FURTHER INFORMATION CONTACT:** Greg DiLibero, Aviation Safety Engineer, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Blvd., Lakewood, California 90712, telephone (562) 627-5231, fax (562) 627-5210.

Issued in Fort Worth, Texas, on April 2, 2001.

Eric Bries, Acting Manager, Rotorcraft Directorate, Aircraft Certification Service.